Idaho Water Supply Outlook Report January 1, 2004

Myrtle Creek SNOTEL site -- installed October 2003 at an elevation of 3,520 feet in the Panhandle Basin.

The site was installed to monitor rapid snowmelt and precipitation events after the Myrtle Creek fire occurred in September 2003. Myrtle Creek is located 6 miles west of Bonners Ferry in northern Idaho.

Standard sensors include: snow water, precipitation, snow depth and air temperature.
Enhanced sensors include: soil moisture and temperature at 2, 4, 8 and 20 inches deep, wind speed and direction, humidity, solar radiation, and snow depth

Basin Outlook Reports
and
Federal - State - Private
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Internet Web Address
http://www.id.nrcs.usda.gov/snow/

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT

January 1, 2004

SUMMARY

The 2004 water year began October 1 with a slow start. Mother Nature started delivering abundant moisture to Idaho on Christmas Eve. Snowpacks have been increasing since and are now 100-150% of average as of January 7. This is good news but, with half the winter still to come, the water supply outlook will not be fully known until Mother Nature plays her final card. Streamflow forecasts for most basins are in the 90-110% of average range for the April-September period. The exception is the Bear River at Stewart Dam which is forecast at only 20% of average. Water users should be prepared for shortages in Bear Lake area, especially if future precipitation is below average. In most other basins, streamflow forecasts look encouraging for Idaho's numerous water users. With more than half the season still to come, snowpack conditions in the second half of winter could improve with additional storms, maintain current snow levels with normal precipitation, or deteriorate with below normal precipitation. With some variables unknown such as soil moisture, timing of the runoff, future precipitation, it is too early to tell whether this year will break the four year drought.

SNOWPACK

Abundant moisture since Christmas Eve gave Idaho's snowpacks the boost they needed and they have continued increasing into the first week of January. January 1 snowpacks were the highest in the basins south of the Snake River at 130% of average. Elsewhere in the state, most basins range from 105-115% of average. A few isolated basins, Mores, Owyhee and Willow (eastern Idaho), are greater than 140% of average. The lowest snowpacks are 90-95% of average in the Lemhi, Mann, Little Lost, Birch, Medicine Lodge, and Greys (Wyoming) basins.

PRECIPITATION

The new water year started dry, much like water year 2003 ended. October precipitation ranged from 16% of average in the basins south of the Snake River to 40% in the Salmon basin. Only the Clearwater and Panhandle Region received near average precipitation in October. November brought a little more precipitation and snow to start the annual accumulation of Idaho's high elevation snowpack, ranging from 70% of average in central Idaho to 125% in the Clearwater basin. In December, the weather pattern changed with a few SNOTEL sites in southern Idaho and northern Nevada receiving 200% of average precipitation while the Panhandle Region and Clearwater basin received only 75-85%. Precipitation for the water year ranges from 90% of average in the Salmon basin to 108% in the basins south of the Snake River.

RESERVOIRS

Reservoir storage remains low to record low across southern and eastern Idaho. Combined storage for Palisades and Jackson reservoirs is 24% of capacity, 36% of average, and lower than last year. Blackfoot Reservoir remains nearly empty at about 18,000 acre-feet, the lowest November storage level since 1935. Bear Lake has only 134,700 acre-feet, only about 15,000 acre-feet usable storage. Oakley and Salmon Falls reservoirs are 25% of average and nearly empty like a year ago. Owyhee Reservoir is 14% of average, its third lowest December storage level. Magic Reservoir is nearly empty at only 9% full, 22% of average, which is the same as a year ago. Little Wood and Mackay are 60% full. The Boise reservoir system is 43% full, 77% of average. The Payette reservoir system is 58% full, slightly better than last year. Brownlee and Dworshak reservoir are at average. The lakes and reservoirs in northern Idaho and northwest Montana are storing near average amounts except for Coeur d'Alene Lake which is 39% of average.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and, in some cases, dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

Streamflow forecasts for most basins are in the 90-110% of average range for the April-September period. The exception is the Bear River at Stewart Dam which is forecast at only 20% of average. The headwater streams in the Bear River are forecast at 90% of average and decrease similarly like last year's streamflow as you travel downstream. The highest forecasts are in the Owyhee basin at 120% of average. These forecast numbers are the volume under the 50% Chance of Exceeding, which means there is a 50% chance the volume will be greater or less then the given value. The numbers sound promising right now, except in the Bear, but with more than half the winter still to come, things could change for the better or worse. Water users may consider using a lesser exceedance forecast to reduce their risk of being water short. With so many future unknown variables such as soil moisture, timing of the runoff, future winter and spring precipitation, it is too early to tell whether this year will break the three to four year southern Idaho drought until Mother Nature has her final say. Remember last spring, when record low temperatures gave way to record high temperatures in May, flushing the snow out of the mountains and into the streams and reservoirs only to be followed by a very dry summer.

Some late fall and early winter rains helped to improve soil moisture conditions in the west-central mountains and in the Clearwater and Panhandle regions, but soils are still dry at the 20 inch depth as indicated by soil moisture sensors at Jackson Peak SNOTEL in the Boise basin. As a result of the precipitation, some Panhandle streams spiked upward above normal flows after several precipitation events this fall, only to sharply drop off back to below normal levels. This indicates the effects of the drought are still present and the need for additional precipitation for the remainder of the winter season to alleviate the long-term drought not just in northern Idaho but also southern Idaho. In fact, several wet years may be needed to eliminate the drought in southern Idaho.

RECREATION

Mother Nature started delivering abundant moisture across Idaho on Christmas Eve and didn't stop until the first week of January. This was a Christmas present for Idaho's winter recreationists with some snow measuring sites nearly doubling in snow depth and snow water. Snow measuring stations indicate that mid-elevation areas in the 6,000 foot zone in the west-central mountains received the most snowfall from the recent storms. Snow sites in the headwaters of the Boise basin are nearly 100 inches deep, about the same as in the Clearwater basin, which usually receives much more snow. Cold temperatures allowed the snow to fall with a light density. The 30 inches of snow that fell above Idaho City only had 2.5 inches of water and was at 8% density. The light snow made backcountry travel difficult and dangerous. Some snow surveyors reported they dug tunnels through the snow to get to some snow sites in western Wyoming. Light snow caused more drifting and increased avalanche danger. The snow depth will settle with new snow or warmer temperatures.

Streamflow forecasts look encouraging for Idaho's whitewater rafting season, but with more than half the season still to come, snowpack conditions in the second half of winter could improve more with additional storms, maintain current levels with normal future precipitation, or deteriorate with below normal precipitation. Stay tuned, as we still have 5 more innings to go...

This Percent of Peak report is available Monday through Friday on the Idaho Snow Survey web page: http://www.id.nrcs.usda.gov/snow/data/current.html

Based on mountain data from NRCS SNOTEL Sites as of Friday: January 9, 2004

BASIN	SNOW WATER EQUIVALENT Percent of Average For Today	SNOW WATER EQUIVALENT Percent of April 1 Peak**
Idaho Panhandle Region	100	50
Clearwater Basin	110	53
Salmon Basin	107	49
Weiser Basin	114	53
Payette Basin	120	54
Boise Basin	122	57
Big Wood Basin	117	55
Little Wood Basin	135	60
Big Lost Basin	124	55
Little Lost, Birch Basins	101	47
Medicine Lodge, Beaver, Camas Basins	129	58
Henrys Fork, Teton Basins	133	62
Snake Basin Above Palisades	117	55
Willow, Blackfoot, Portneuf Basins	130	60
Oakley Basin	128	58
Salmon Falls Basin	131	59
Bruneau Basin	139	64
Owyhee Basin	154	76
Bear River Basin	113	50

IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of January 1, 2004

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

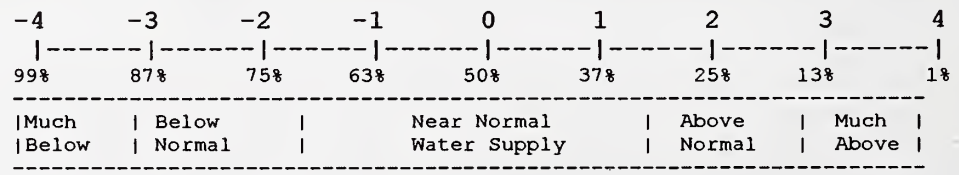
SWSI values are published January through May and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US National Weather Service
US Bureau of Reclamation
Idaho Water Users Association
US Army Corps of Engineers
Idaho Dept. of Water Resources
PacifiCorp

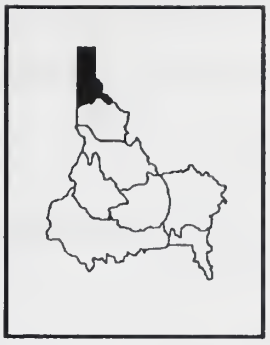
BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
PANHANDLE	-0.9	1993	NA
CLEARWATER	1.1	1989	NA
SALMON	-0.2	2003	NA
WEISER	0.5	2002	NA
PAYETTE	0.0	2003	NA
BOISE	0.2	1993	-2.1
BIG WOOD	-0.2	2000	-1.0
LITTLE WOOD	0.5	1996	-2.0
BIG LOST	0.0	1993	-0.5
LITTLE LOST	-0.5	1990	0.0
HENRYS FORK	1.5	1993	-3.3
SNAKE (HEISE)	-0.7	2000	-2.0
OAKLEY	-0.7	1995	-1.0
SALMON FALLS	-1.5	2000	-1.0
BRUNEAU	1.0	1996	NA
BEAR RIVER	-3.9	2003	-3.8

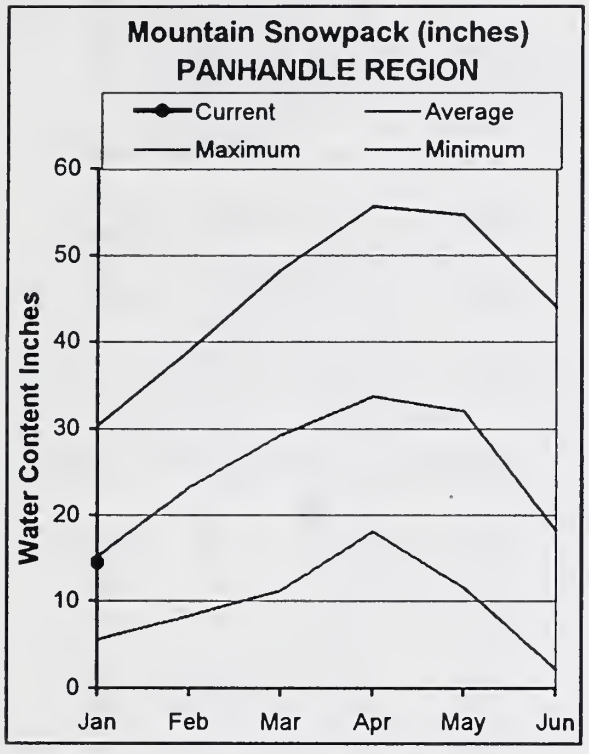
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

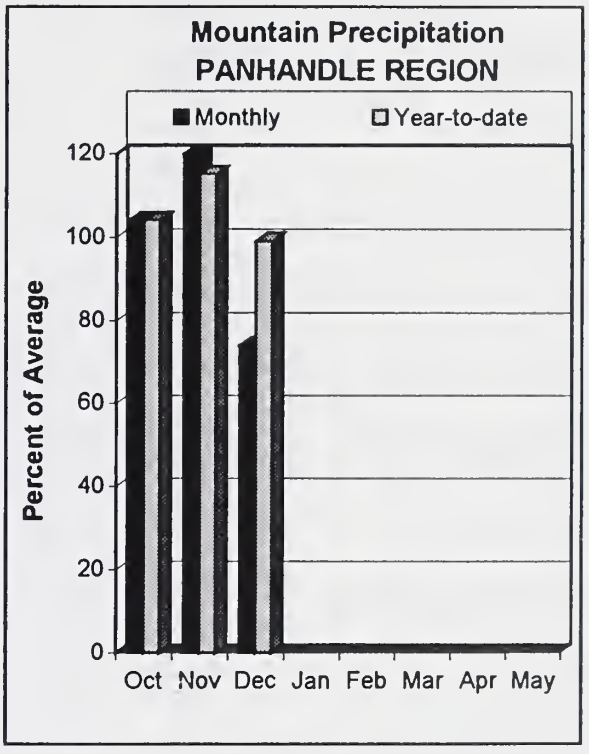


Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

PANHANDLE REGION
JANUARY 1, 2004







WATER SUPPLY OUTLOOK

The Panhandle Region and the Clearwater basin were the only areas in the state to receive near normal or better precipitation in October and November. December brought precipitation that was 74% of average, the lowest in the state. Water year to date precipitation is normal. The snowpack is normal in the Pend Oreille basin. The Coeur d'Alene River basin snowpack is 111% of average, nearly twice what it was last year. The St. Joe basin snowpack is 96% of average. The Spokane River basin snowpack is 105% of average, much better than the 51% of average measured a year ago. The snowpacks are just less than half of their seasonal peaks that occur around April 1. The lakes and reservoirs in northern Idaho and northwest Montana are storing near average water except for Coeur d'Alene Lake which is 39% of average. Streamflow forecasts call for near average runoff ranging from 95-105% of average. With half the winter still to come, conditions can still improve. The normal or better fall rains increased the soil moisture in this region and the soil moisture appears in better shape than the rest of Idaho. However, even with the fall rains, streamflow levels were still returning to below normal levels between rain events indicating dry soils and springs may still be lingering from the dry summer.

PANHANDLE REGION
Streamflow Forecasts - January 1, 2004

Forecast Point	Forecast Period	<<====== Drier ===== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	APR-JUL	4780	6080	6670	95	7260	8560	7040
	APR-SEP	5010	6880	7730	95	8580	10450	8120
MOYIE RIVER at Eastport	APR-JUL	300	360	400	99	440	500	405
	APR-SEP	315	380	420	100	460	525	420
SMITH CREEK	APR-JUL	90	108	120	98	132	150	123
	APR-SEP	92	112	125	97	138	158	129
BOUNDARY CREEK	APR-JUL	91	108	119	97	130	147	123
	APR-SEP	96	113	125	97	137	154	129
CLARK FK at Whitehorse Rpds (1,2)	APR-JUL	5500	8890	10430	92	11970	15360	11300
	APR-SEP	6130	9870	11560	93	13250	16990	12500
PEND OREILLE Lake Inflow (2)	APR-JUL	7580	10060	11740	92	13420	15900	12700
	APR-SEP	8360	11060	12900	93	14740	17440	13900
PRIEST near Priest River (1,2)	APR-JUL	640	780	845	104	910	1050	815
	APR-SEP	570	795	900	103	1000	1230	870
COEUR D'ALENE at Enaville	APR-JUL	560	685	770	104	855	980	740
	APR-SEP	590	720	810	104	900	1030	780
ST. JOE at Calder	APR-JUL	820	1010	1130	100	1250	1440	1130
	APR-SEP	885	1070	1200	100	1330	1520	1200
SPOKANE near Post Falls (2)	APR-JUL	1640	2130	2470	97	2810	3300	2550
	APR-SEP	1720	2220	2570	97	2920	3420	2650
SPOKANE at Long Lake (2)	APR-JUL	1720	2360	2790	100	3220	3860	2780
	APR-SEP	1890	2560	3020	100	3480	4150	3010

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2666.0	2551.0	2420.9
FLATHEAD LAKE	1791.0	1119.0	1192.0	1192.7
NOXON RAPIDS	335.0	310.8	323.4	315.8
PEND OREILLE	1561.3	553.4	911.1	673.4
COEUR D'ALENE	238.5	42.5	79.5	110.1
PRIEST LAKE	119.3	63.2	58.0	55.7

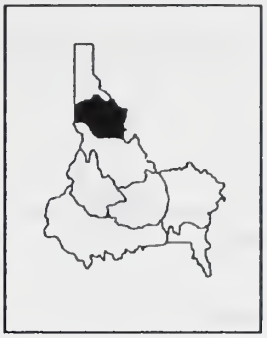
PANHANDLE REGION
Watershed Snowpack Analysis - January 1, 2004

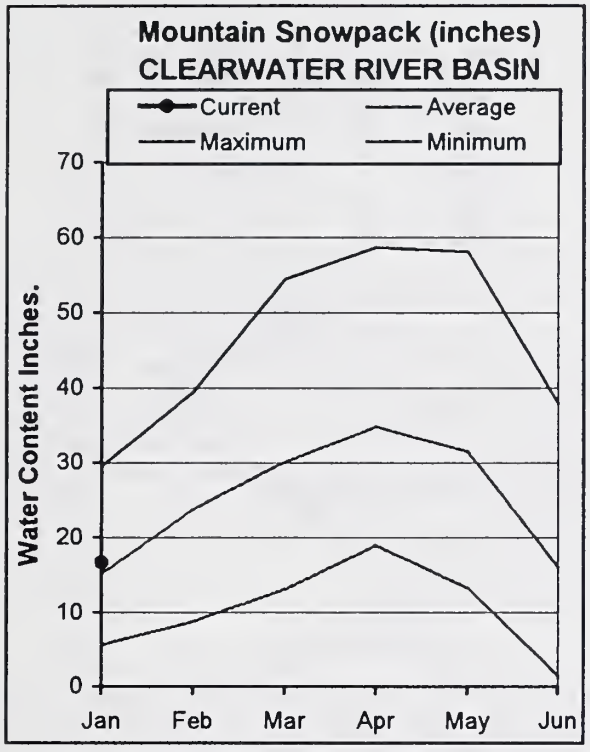
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	15	142	96
Moyie River	4	174	111
Priest River	4	103	103
Pend Oreille River	65	158	100
Rathdrum Creek	1	126	96
Hayden Lake	0	0	0
Coeur d'Alene River	6	206	111
St. Joe River	4	189	96
Spokane River	9	196	105
Palouse River	1	300	100

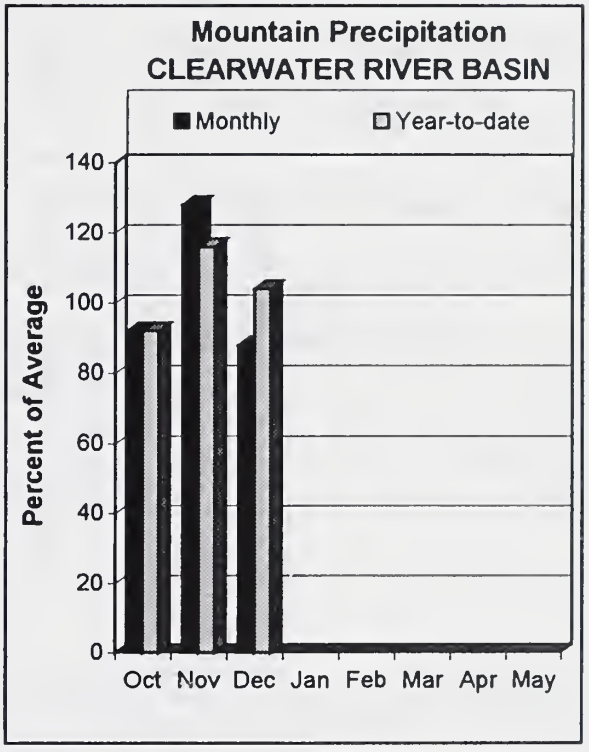
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

CLEARWATER RIVER BASIN
JANUARY 1, 2004







WATER SUPPLY OUTLOOK

The Clearwater basin and Panhandle Region were the only areas in the state to receive near normal or better precipitation in October and November. Precipitation in December was 88% of average and is just above normal since the water year started October 1. The Clearwater basin had the highest snowpacks in the state for most of December, around 115% of average. However, the winter storms at the end of December tracked through central and southern Idaho, which kept the Clearwater basin snowpack around 112% of average at month's end. This weather pattern allowed some southern Idaho snowpacks to increase 30-40 percentage points. The Selway basin snowpack is the highest at 124% of average. The Lochsa and North Fork Clearwater basins are 105% of average. Overall, the Clearwater basin snowpack is 109% of average, much better than the 60% of average measured a year ago. Depth of snow at several SNOTEL sites in the Clearwater basin is 100 inches deep. Dworshak Reservoir is 64% of capacity, same as a year ago, which is also average for January 1. Streamflow forecasts range from 100-105% of average for these Clearwater streams. With the snowpack currently at half of its seasonal peak, lets hope the second half of winter sees normal or better precipitation to maintain these near normal snowpacks.

CLEARWATER RIVER BASIN
Streamflow Forecasts - January 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SELWAY near Lowell	APR-JUL	1610	1930	2140	104	2350	2670	2060
	APR-SEP	1690	2020	2250	104	2480	2810	2170
LOCHSA near Lowell	APR-JUL	1130	1370	1530	100	1690	1930	1530
	APR-SEP	1210	1450	1610	100	1770	2010	1610
DWORSHAK RESV INFLOW (1,2)	APR-JUL	1580	2440	2830	107	3220	4080	2640
	APR-SEP	1750	2610	3000	107	3390	4250	2800
CLEARWATER at Orofino (1)	APR-JUL	2370	3890	4580	99	5270	6790	4640
	APR-SEP	2620	4140	4830	99	5520	7040	4900
CLEARWATER at Spalding (1,2)	APR-JUL	4060	6630	7800	105	8970	11540	7440
	APR-SEP	4500	7070	8240	105	9410	11980	7850

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2209.0	2194.6	2228.2

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - January 1, 2004

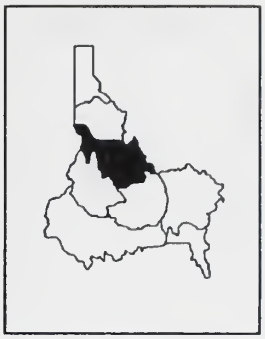
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	179	106
Lochsa River	3	163	105
Selway River	4	166	124
Clearwater Basin Total	17	179	109

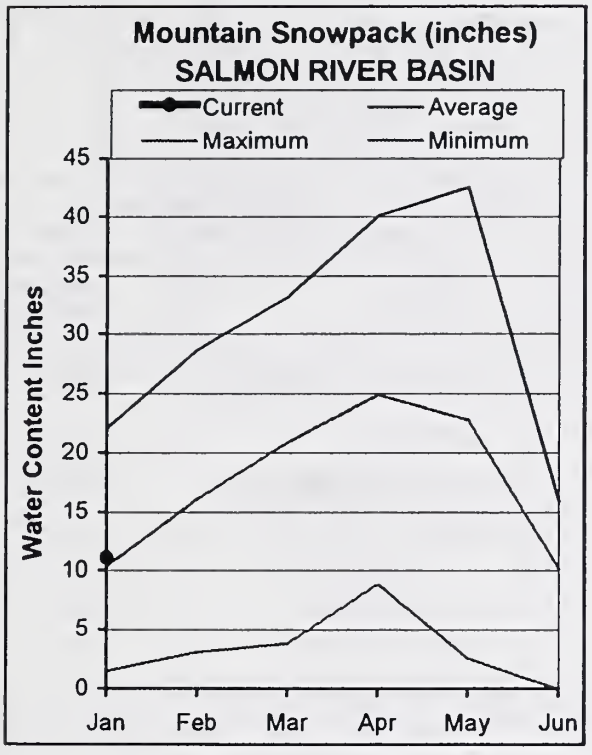
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

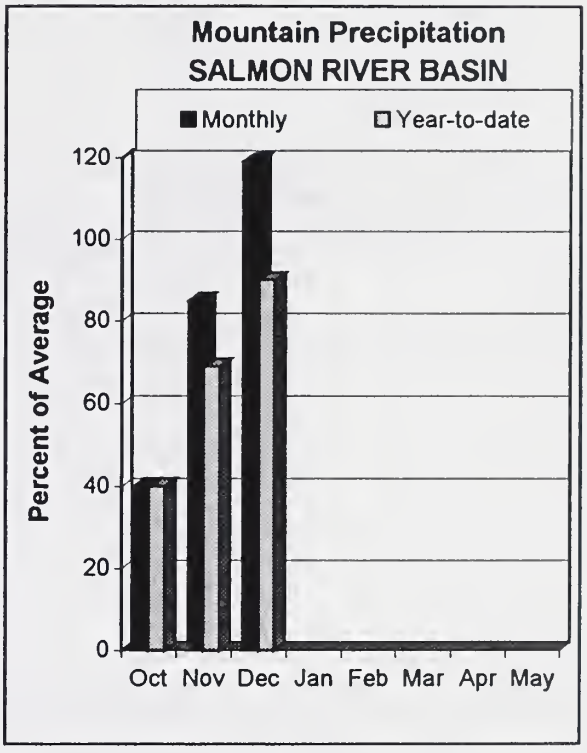
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SALMON RIVER BASIN
JANUARY 1, 2004







WATER SUPPLY OUTLOOK

Monthly precipitation keeps getting better with each passing month, increasing from 40% of average in October, 85% in November, to 119% in December. Precipitation since the water year started remains below normal at 90% of average, which also shows how dry the fall was. January 1 snowpacks in the Salmon River basin decrease from west to east. The Little Salmon basin is the highest at 119% of average, South Fork Salmon is 114%, Middle Fork Salmon is 103%; Salmon basin above Salmon is 97%, and Lemhi basin is 92% of average. Overall, the Salmon basin snowpack is 106% of average. The snowpack at Deadwood Summit SNOTEL site, 6,860 feet, on January 5 was 100 inches deep with 22.3 inches of water, slightly better than last year and 2.5 inches above average. Two new streamflow forecasts were developed and are now being published by the NRCS. These include the Middle Fork Salmon River at Middle Fork Lodge, forecast at 91% of average, and Lemhi River near Lemhi, forecast at 75%. The Lemhi River forecast is a projection of observed flow and is not corrected for the diversions above the USGS gaging station. The Salmon River at Salmon is forecast at 96% of average and the Salmon River at White Bird is forecast at 102% of average. The water supply outlook is looking promising with more than half the April 1 seasonal peak snowpack already on the ground.

SALMON RIVER BASIN
Streamflow Forecasts - January 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	APR-JUL	380	680	820	96	955	1265	855
	APR-SEP	520	820	960	96	1100	1400	1000
Lemhi River nr Lemhi	APR-JUL	31	49	64	74	81	108	86
	APR-SEP	41	62	79	75	98	130	105
MF Salmon at MF Lodge	APR-JUL	456	606	720	91	844	1045	790
	APR-SEP	511	675	800	91	935	1153	875
SALMON at White Bird (1)	APR-JUL	3590	5210	5940	102	6670	8290	5850
	APR-SEP	4230	5850	6580	102	7310	8930	6480

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN
Watershed Snowpack Analysis - January 1, 2004

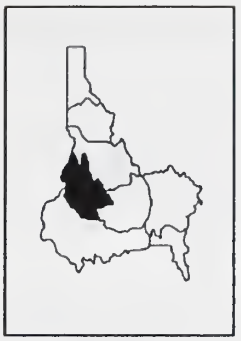
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	9	107	97
Lemhi River	6	141	92
Middle Fork Salmon River	3	107	103
South Fork Salmon River	3	104	114
Little Salmon River	4	108	119
Salmon Basin Total	24	115	106

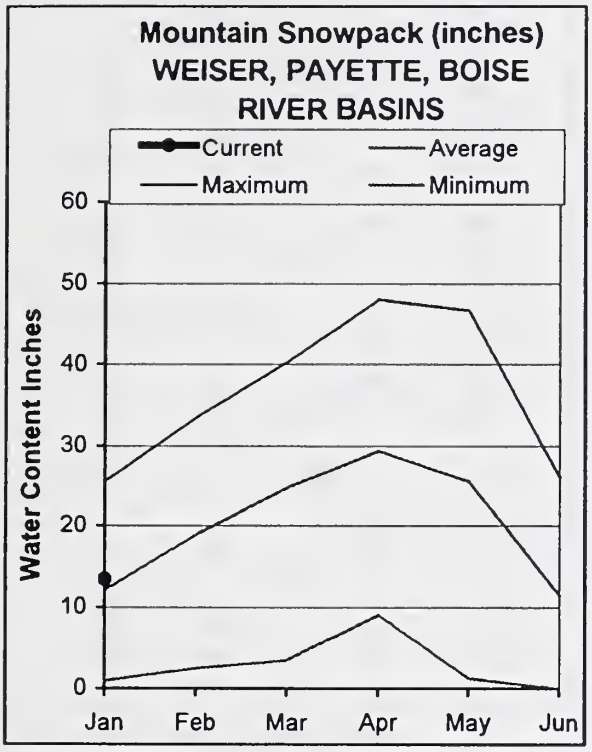
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

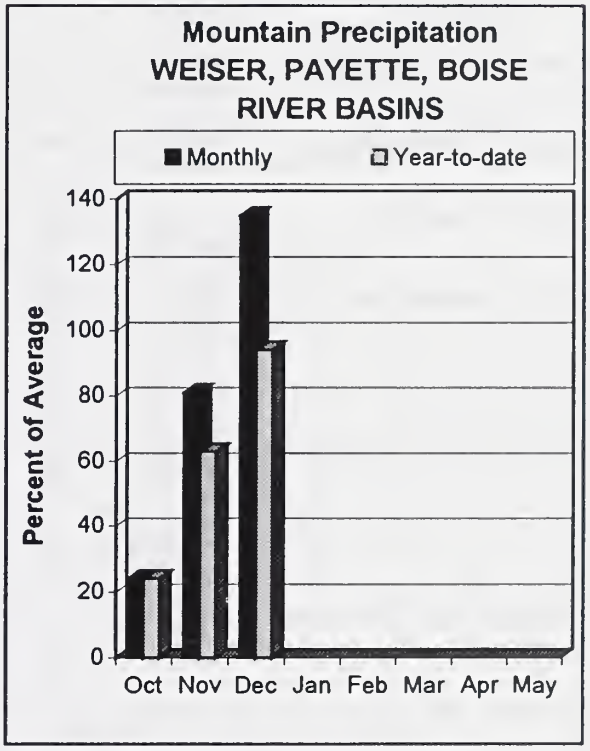
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS JANUARY 1, 2004







WATER SUPPLY OUTLOOK

The new water year started with only 25% of average precipitation falling in October, but increased to 81% in November and to 135% in December. Water year to date precipitation is improving but remains below average at 94% of average. Some late fall and early winter rains helped to improve soil moisture conditions in the west-central mountains as indicated by the Jackson Peak soil moisture sensors, but soils are still dry at the 20 inch deep sensor. Snow measuring stations indicate that mid-elevations in the 6,000 foot zone received the most snowfall from the recent winter storms. The Mores Creek drainage snowpack is 145% of average. Mores Creek SNOTEL, elevation 6,100 feet, has about 20 inches of snow water (90 inches of snow on the ground), nearly the same amount as Trinity Mountain SNOTEL site at 7,770 feet. The snowpack in the North Fork Payette basin is 128% of average, Payette Basin is 122%, Boise basin 120%, and Weiser basin is 104%. The Payette Reservoir System is 58% full, 91% of average. The Boise Reservoir System is 43% full, 77% of average. Streamflow forecasts are for 100% of average for the Weiser River, 95% for the Payette River near Horseshoe Bend, and 99% for the Boise River near Boise. The water supply picture improved greatly with the storms since Christmas Eve with some sites nearly doubling their snow water content amounts. However, with only slightly more than half of the snow water content on the ground when compared to the normal April 1 seasonal peaks, we still have a ways to go to ensure an adequate water supply.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - January 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
WEISER near Weiser (1)	APR-SEP	185	345	420	100	495	655	420
SF PAYETTE at Lowman	APR-JUL	290	375	430	105	485	570	410
	APR-SEP	320	410	470	100	530	620	470
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL	75	111	127	95	143	179	134
	APR-SEP	82	118	134	94	150	186	142
LAKE FORK PAYETTE near McCall	APR-JUL	63	75	83	98	91	103	85
	APR-SEP	66	78	86	97	94	106	89
NF PAYETTE at Cascade (1,2)	APR-JUL	280	415	480	97	545	680	495
	APR-SEP	315	450	515	97	580	715	530
NF PAYETTE nr Banks (2)	APR-JUL	400	535	625	97	715	850	643
	APR-SEP	425	570	665	96	760	905	690
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	860	1330	1540	95	1750	2220	1620
	APR-SEP	970	1450	1670	95	1890	2370	1760
BOISE near Twin Springs (1)	APR-JUL	445	575	635	100	695	825	635
	APR-SEP	435	610	690	100	770	945	690
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL	370	470	515	95	560	660	540
	APR-SEP	305	475	550	95	625	795	580
MORES CREEK near Arrowrock Dam	APR-JUL	95	124	143	109	162	191	131
	APR-SEP	100	129	149	109	169	196	137
BOISE near Boise (1,2)	APR-JUN	750	1090	1240	98	1390	1730	1260
	APR-JUL	785	1200	1390	99	1580	1990	1410
	APR-SEP	900	1320	1510	99	1700	2120	1530

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	0.8	1.2	3.3
CASCADE	693.2	411.1	423.7	456.4
DEADWOOD	164.0	81.9	55.7	82.5
ANDERSON RANCH	450.2	277.2	142.5	296.8
ARROWROCK	272.2	1.3	79.2	173.1
LUCKY PEAK	293.2	156.8	110.0	95.5
LAKE LOWELL (DEER FLAT)	165.2	103.4	59.3	98.4

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2004

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	1	104	94
Weiser River	3	109	104
North Fork Payette	8	115	128
South Fork Payette	5	112	113
Payette Basin Total	14	116	122
Middle & North Fork Boise	5	115	112
South Fork Boise River	7	104	108
Mores Creek	5	153	145
Boise Basin Total	14	121	120
Canyon Creek	2	110	147

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
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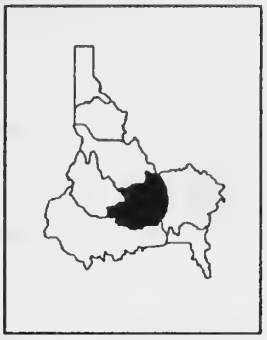
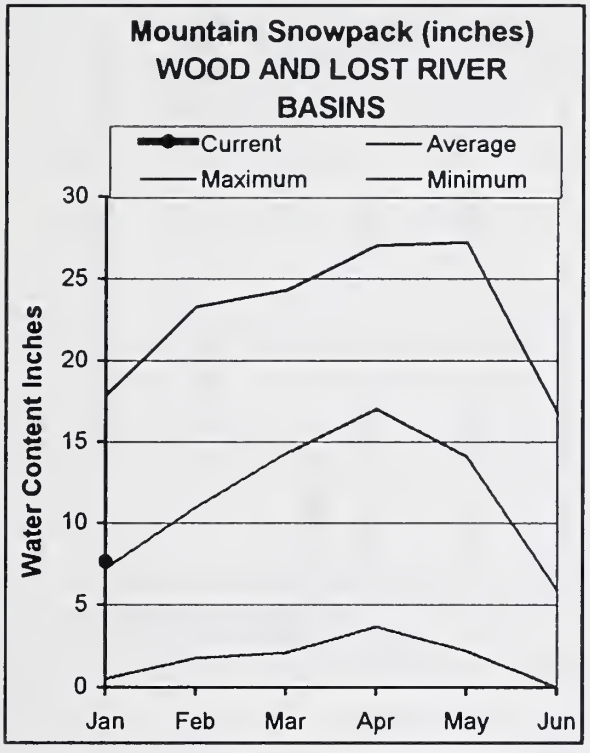
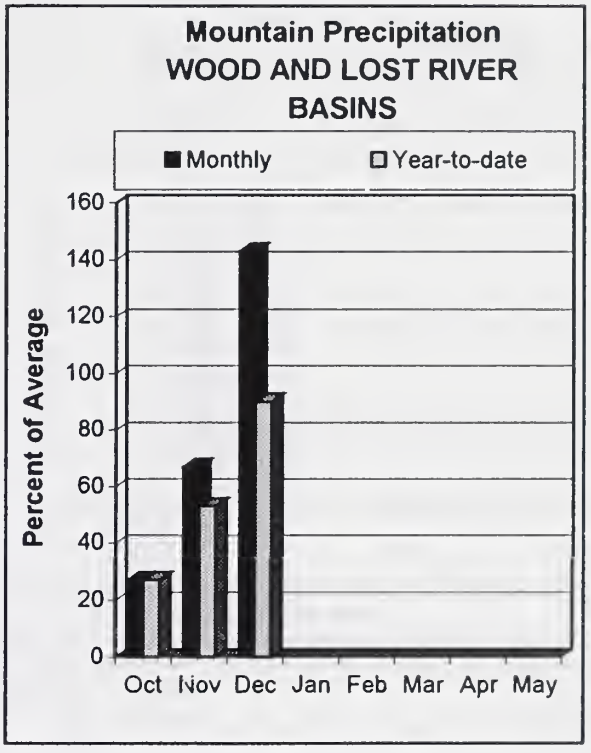
WOOD and LOST RIVER BASINS
JANUARY 1, 2004







WATER SUPPLY OUTLOOK

Monthly precipitation keeps getting better with each month. Precipitation in October was a quarter of average and only two-thirds in November, which means the soils are still dry under the snow. December precipitation was 143%. Of average, only the basins south of the Snake River received more. Precipitation for the water year is below average at 90% of average, another indicator of the dry fall weather. January 1 snowpacks are the greatest in the mid-elevation Camas Creek basin, 141% of average. Little Wood snowpack is 122% of average and Big Lost is 112%. Big Wood above Hailey snowpack is 103% of average, while some of the lowest snowpacks in the state are 93% of average in the Little Lost, Birch and Medicine Lodge basins. These basins have increased 10-20 percentage points since the first of January. Reservoir storage remains nearly empty with Magic, Little Wood and Mackay reservoirs having a combined storage of 15% of capacity, 35% of average. Streamflow forecasts call for near average runoff, except for the Little Lost River forecast at 80% of average. The snowpack is encouraging at this point, but is only slightly more than half of its normal April 1 peak. With more than half the season still to come, much more moisture is needed to overcome the moisture deficit from the past four drought years.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - January 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
BIG WOOD at Hailey (1)	APR-JUL	122	199	240	94	285	397	255
	APR-SEP	141	225	270	93	319	440	290
BIG WOOD near Bellevue	APR-JUL	65	113	154	82	201	281	188
	APR-SEP	73	124	166	83	214	296	201
CAMAS CREEK near Blaine	APR-JUL	47	79	105	105	135	187	100
	APR-SEP	47	79	106	105	136	188	101
BIG WOOD below Magic Dam (2)	APR-JUL	80	193	270	93	345	460	290
	APR-SEP	94	211	290	94	370	485	310
LITTLE WOOD near Carey (2)	MAR-JUL	42	75	97	101	119	152	96
	MAR-SEP	47	82	105	101	128	163	104
	APR-JUL	37	68	89	102	110	141	87
	APR-SEP	41	74	96	102	118	151	94
BIG LOST at Howell Ranch	APR-JUN	86	116	136	102	156	186	134
	APR-JUL	105	147	176	102	203	248	173
	APR-SEP	122	168	200	102	230	280	197
BIG LOST below Mackay Reservoir (2)	APR-JUL	70	111	139	99	167	207	141
	APR-SEP	95	140	170	99	201	246	172
LITTLE LOST blw Wet Creek	APR-JUL	15.1	20	24	77	28	33	31
	APR-SEP	20	27	31	80	35	42	39

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	17.8	14.8	79.7
LITTLE WOOD	30.0	9.1	7.3	14.1
MACKAY	44.4	13.7	10.0	23.7

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - January 1, 2004

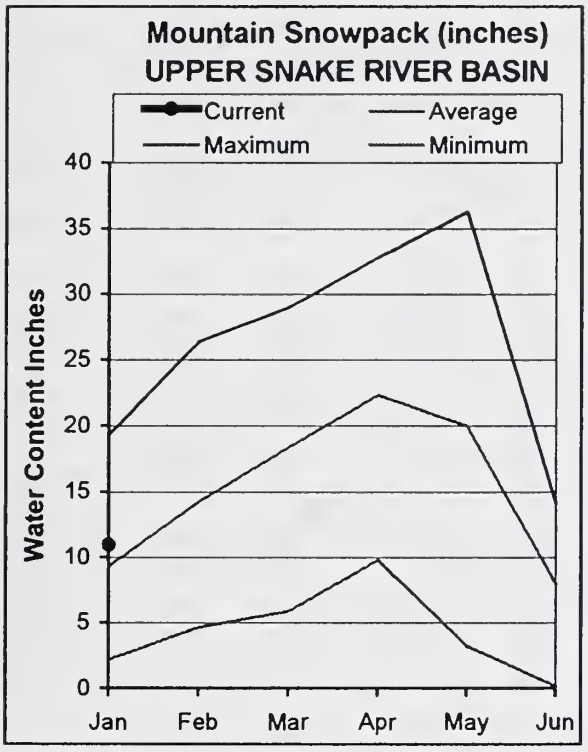
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	8	91	103
Camas Creek	3	104	141
Big Wood Basin Total	11	93	109
Fish Creek	0	0	0
Little Wood River	5	80	122
Big Lost River	5	84	112
Little Lost River	3	114	91
Birch-Medicine Lodge Cree	2	144	94
Camas-Beaver Creeks	4	150	126

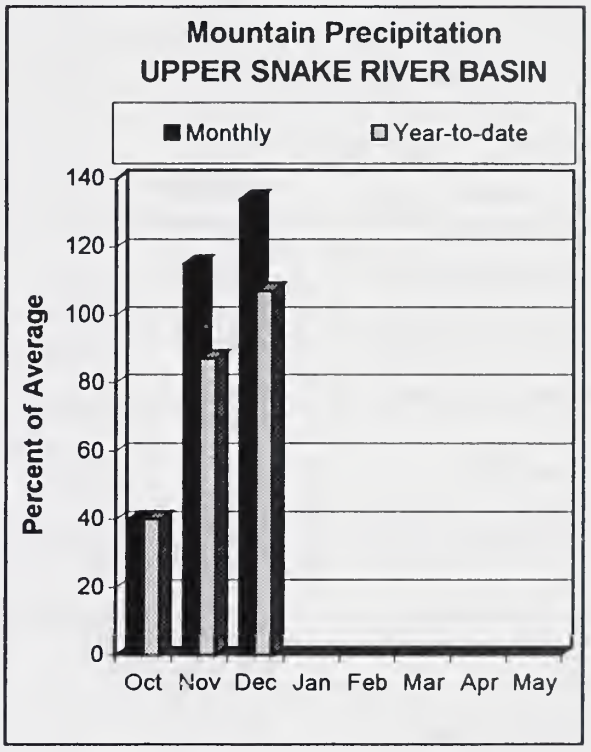
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

UPPER SNAKE RIVER BASIN
JANUARY 1, 2004





WATER SUPPLY OUTLOOK

The water year started with only 40% of average precipitation in October. November faired better with above normal precipitation at 115% of average and increasing to 134% in December. Water year to date precipitation is 107% of average in the upper Snake basin. The snowpack is 130% of average in the headwaters of the Henrys Fork and Snake River, and decreases to 114% for the Snake above Palisades Reservoir. In the lower elevation basins, the snowpack increases to 143% of average in Willow basin, 132% in Portneuf basin and 117% in Blackfoot basin. Overall, the Snake basin above American Falls Reservoir is 120% of average and has 50% more snow than a year ago. Wildhorse Divide SNOTEL site, located 10 miles south of Pocatello at 6,490 feet, has 11.1 inches of snow water, the most snow on January 1 since 1997, and it has already exceeded last year's peak of 11.0 inches that occurred on March 28! Wildhorse Divide SNOTEL site has two-thirds of its normal seasonal maximum of 17.7 inches that occurs around April 3. The current snowpack is 55-60% of its seasonal peak. Normal or better precipitation is needed in the second half of winter to maintain these encouraging snow numbers and start overcoming the moisture deficit from the four-year drought. Reservoir storage remains at or near record low levels; combined storage for Palisades and Jackson is 36% of average, which is lower than last year. Because of deep snow, the Blackfoot water master was not able to read the reservoir storage last month but the abundant snowfall is a welcome sign. Blackfoot Reservoir remains nearly empty at about 18,000 acre-feet, the lowest November storage level since 1935. Streamflow forecasts range from 90-110% of average in the upper Snake basin.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - January 1, 2004

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK near Ashton (2)	APR-JUL	500	555	595	104	635	690	572
	APR-SEP	680	745	790	104	835	900	763
HENRYS FORK near Rexburg (2)	APR-JUL	1110	1280	1400	107	1520	1690	1310
	APR-SEP	1440	1630	1760	107	1890	2080	1650
FALLS near Squirrel (1,2)	APR-JUL	310	370	395	103	420	480	385
	APR-SEP	370	440	470	102	500	570	460
TETON near Driggs	APR-JUL	118	148	169	102	190	220	165
	APR-SEP	153	190	215	102	238	278	210
TETON near St. Anthony	APR-JUL	305	370	415	103	460	525	405
	APR-SEP	370	445	495	102	545	620	485
SNAKE near Moran (1,2)	APR-SEP	655	815	890	99	965	1130	895
PACIFIC CREEK at Moran	APR-SEP	144	170	188	102	205	230	184
SNAKE above Palisades (2)	APR-JUL	1900	2200	2410	102	2620	2920	2360
	APR-SEP	2230	2570	2800	102	3030	3370	2740
GREYS above Palisades	APR-JUL	225	285	325	96	365	425	340
	APR-SEP	270	335	380	96	425	490	395
SALT near Etna	APR-JUL	210	280	325	96	370	440	340
	APR-SEP	270	350	405	96	460	540	420
PALISADES RESERVOIR INFLOW (1,2)	APR-JUL	2010	2670	2970	101	3270	3930	2950
	APR-SEP	2830	3570	3910	101	4250	4990	3890
SNAKE near Heise (2)	APR-JUL	2800	3280	3600	101	3920	4400	3560
	APR-SEP	3290	3830	4200	101	4570	5110	4160
WILLOW CREEK nr Ririe	MAR-JUL	41	67	87	99	110	149	88
BLACKFOOT RESV INFLOW	APR-JUN	66	99	122	102	145	177	120
SNAKE nr Blackfoot (1,2)	APR-JUL	3470	4440	4880	106	5320	6290	4600
	APR-SEP	4550	5520	5960	106	6400	7370	5620
PORTNEUF at Topaz	MAR-JUL	64	77	86	97	95	108	89
	MAR-SEP	79	95	105	96	115	131	109
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	1610	2800	3340	103	3880	5070	3240
	APR-SEP	1870	3060	3600	103	4140	5330	3500

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

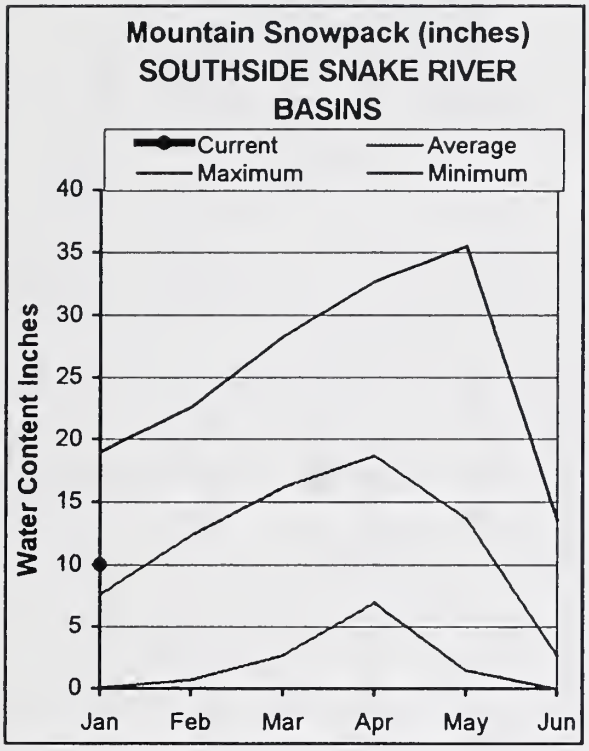
Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	66.6	66.1	82.5
ISLAND PARK	135.2	68.1	56.4	96.1
GRASSY LAKE	15.2	9.5	12.3	11.6
JACKSON LAKE	847.0	142.9	245.7	481.7
PALISADES	1400.0	398.9	443.2	1036.5
RIRIE	80.5	27.5	31.5	34.5
BLACKFOOT		NO REPORT		
AMERICAN FALLS	1672.6	609.9	688.0	986.6

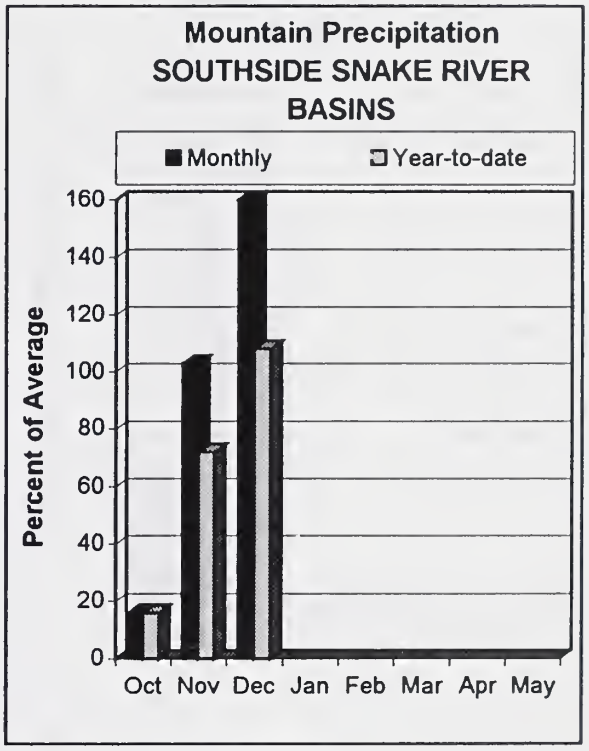
UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2004

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Henrys Fork-Falls River	10	175	133
Teton River	3	147	123
Henrys Fork above Rexburg	13	169	131
Snake above Jackson Lake	9	158	129
Gros Ventre River	2	130	96
Hoback River	5	142	103
Greys River	4	134	92
Salt River	3	128	105
Snake above Palisades	22	146	114
Willow Creek	2	134	143
Blackfoot River	2	118	117
Portneuf River	3	167	132
Snake abv American Falls	34	151	120

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table. The average is computed for the 1971-2000 base period.
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS JANUARY 1, 2004





WATER SUPPLY OUTLOOK

The water year started where the old one ended with October bringing only 16% of average precipitation, the lowest in the state. November precipitation was average and increased to 160% in December, the highest in the state. Water year to date precipitation is slightly above average at 108% because of the abundant December moisture. Snowpacks range from 125-145% of average in these basins south of the Snake River and are 55-70% of their April 1 snow water peaks. However, the nice, white and thick snowpack looks good on the surface, but the brown, dry and thirsty soils will soak up their share of water when the snow melts later this spring. Last year's late summer and early fall streamflow are used as indicators of soil moisture and the Bruneau, Salmon Falls and Goose creeks were at or near minimum streamflow levels in late October. Reservoir storage is near zero with Oakley Reservoir at 9% full, 26% of average and less than last year. Salmon Falls Reservoir is about the same as last year at 23% of average. Owyhee Reservoir is 8% full, 14% of average and at its third lowest with only 1993 and 1989 storing less water. Streamflow forecasts call for 100-120% of average runoff, with the greater amounts in the Owyhee basin. With more than half the winter still to come, the water supply outlook can improve with above normal precipitation the rest of winter. However, if that does not happen, water users may consider using a lesser exceedance forecast to reduce their risk of being water short. With so many future unknown variables such as soil moisture, timing of the runoff, remaining winter precipitation and spring precipitation, it is too early to tell whether this year will break the four-year drought until Mother Nature plays her final card.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - January 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
OAKLEY RESV INFLOW	MAR-JUL	22	30	36	106	43	54	34
	MAR-SEP	24	33	39	105	46	58	37
OAKLEY RESV STORAGE	FEB-28	9.3	11.6	13.1	42	14.6	16.9	31
	MAR-31	13.4	16.3	18.3	51	20	23	36
	APR-30	16.4	20	23	56	26	30	41
SALMON FALLS CREEK nr San Jacinto	MAR-JUN	53	72	85	96	98	117	89
	MAR-JUL	53	74	88	95	102	123	93
	MAR-SEP	57	78	93	95	108	129	98
SALMON FALLS RESV STORAGE	FEB-28	14.8	18.5	21	35	24	27	60
	MAR-31	22	29	34	48	39	46	70
	APR-30	32	42	48	54	54	64	89
BRUNEAU near Hot Spring	MAR-JUL	161	212	250	106	291	358	237
	MAR-SEP	168	220	260	105	303	372	248
OWYHEE near Gold Creek (2)	MAR-JUL	23	32	38	112	44	53	34
OWYHEE nr Owyhee (2)	APR-JUL	48	79	100	122	121	152	82
OWYHEE near Rome	FEB-JUL	426	637	805	123	992	1304	655
OWYHEE RESV INFLOW (2)	FEB-JUL	444	654	820	123	1005	1310	665
	FEB-SEP	471	683	850	123	1035	1340	690
	APR-SEP	249	377	480	120	595	786	400
SUCCOR CK nr Jordan Valley	FEB-JUL	42	49	54	117	59	66	46
SNAKE RIVER at King Hill (1,2)	APR-JUL	519	1469	1900	62	2330	3280	3050
SNAKE RIVER near Murphy (1,2)	APR-JUL	710	1673	2110	68	2545	3510	3090
SNAKE RIVER at Weiser (1,2)	APR-JUL	725	2867	3840	67	4815	6950	5760
SNAKE RIVER at Hells Canyon Dam (1,2	APR-JUL	975	3323	4390	68	5460	7800	6490
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	8927	16404	19800	92	23200	30670	21600

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	74.5	6.7	11.1	25.7
SALMON FALLS	182.6	11.9	11.1	52.6
WILDHORSE RESERVOIR	71.5	13.6	19.3	37.8
OWYHEE	715.0	56.0	113.7	398.1
BROWNLEE	1419.3	1267.3	1287.2	1303.0

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2004

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	1	175	124
Goose-Trapper Creeks	3	182	132
Salmon Falls Creek	6	161	127
Bruneau River	5	144	131
Owyhee Basin Total	8	149	146

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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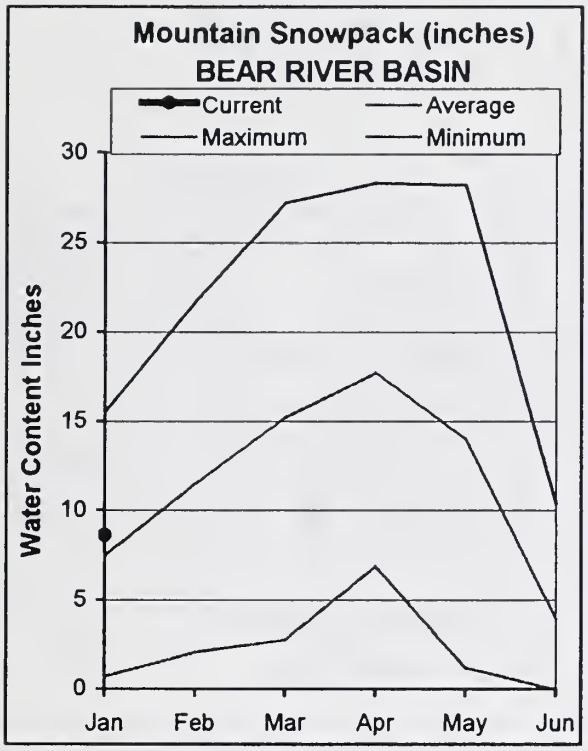
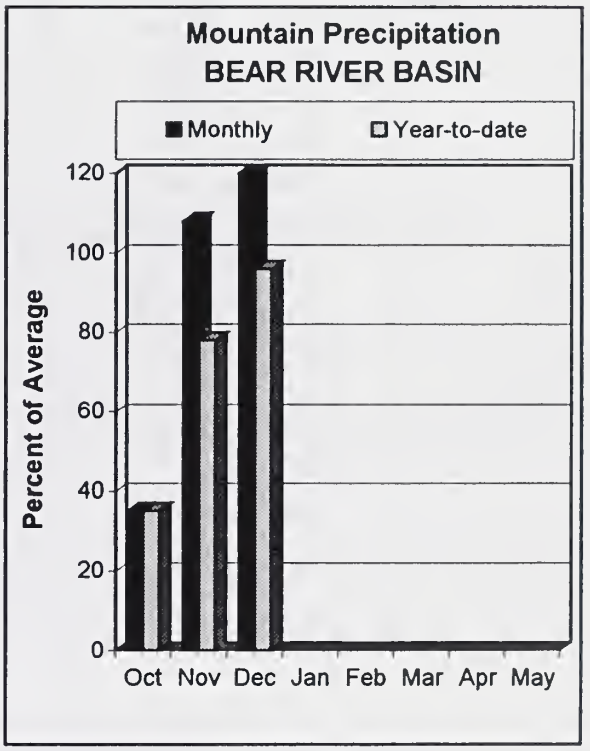
BEAR RIVER BASIN
JANUARY 1, 2004





WATER SUPPLY OUTLOOK

Monthly precipitation in the Bear River basin increased from 35% of average in October, 108% in November, to 120% of average in December. Water year to date precipitation remains below average at 96%. Snowpack percentages range from near average in the Smith and Thomas forks, and headwaters of the Bear River in Utah to 173% of average at Oxford Spring SNOTEL site, located 5 miles northeast of Malad. Oxford Spring SNOTEL has exceeded last year's snow water content peak of 7.8 inches that occurred on March 8. Emigrant Summit SNOTEL, located 25 miles west of Montpelier, is two inches short of exceeding last year's peak snow water of 17.6 inches on April 9. Bear Lake remains nearly empty with only about 15,000 acre-feet available for irrigators this year, which means a good snow year is critical for southeastern Idaho. Streamflow forecasts are the highest in the headwaters in Utah with the Bear River near UT-WY State Line forecast at 91% of average. Streamflow forecasts decrease downstream and call for 62% of average for the Bear River near Woodruff. The Bear River at Stewart Dam is forecast at only 20% of average. This decreasing streamflow volume relationship is similar to last year's observed runoff and is a result of the accumulative drought effects -- dry soils, springs and wetland areas. The Bear River at Stewart Dam forecast was revised last summer and is now a forecast of the observed flow expected at Stewart Dam. The forecast is not adjusted or corrected for the numerous diversions above the gaging station. The Bear River basin Surface Water Supply Index is -3.9 even when using the 10% Exceedance Forecast. The SWSI is a combination of Bear Lake water and projected streamflow that ranges from +4.0 to -4.0. Conditions can improve with above normal winter and spring precipitation, but water users should be prepared for water shortages.

BEAR RIVER BASIN
Streamflow Forecasts - January 1, 2004

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear River nr UT-WY State Line	APR-SEP	70	96	114	91	132	158	125
Bear River ab Reservoir nr Woodruff	APR-SEP	25	63	88	62	113	151	142
Smiths Fork nr Border	APR-JUL	52	74	89	86	104	126	103
	APR-SEP	62	87	104	86	121	146	121
Bear River at Stewart Dam	APR-JUL	7.0	25	43	19	66	110	227
	APR-SEP	9.0	30	50	20	76	123	255

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of December

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	134.7	352.0	907.5
MONTPELIER CREEK	4.0	0.8	---	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - January 1, 2004

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	3	134	98
Bear River ab WY-ID line	10	135	101
Montpelier Creek	1	128	111
Mink Creek	1	163	130
Cub River	1	172	114
Bear River ab ID-UT line	15	145	109
Malad River	1	224	173

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.

influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report. (Revised 12/2000).

Panhandle River Basins

KOOTENAI R AT LEONIA, ID
+ LAKE KOOCANUSA (STORAGE CHANGE)

BOUNDARY CREEK NEAR PORTHILL, ID – No Corrections

MOYIE RIVER AT EASTPORT, ID – No Corrections

SMITH CREEK NEAR PORTHILL, ID – No Corrections

CLARK FORK AT WHITEHORSE RAPIDS, ID
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS RESV (STORAGE CHANGE)

PEND OREILLE LAKE INFLOW, ID
+ PEND OREILLE R AT NEWPORT, WA
+ HUNGRY HORSE (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)
+ NOXON RAPIDS (STORAGE CHANGE
+ PEND OREILLE LAKE (STORAGE CHANGE)
+ PRIEST LAKE (STORAGE CHANGE)

PRIEST R NR PRIEST R, ID
+ PRIEST LAKE (STORAGE CHANGE)

COEUR D'ALENE R AT ENAVILLE, ID - No Corrections

ST. JOE R AT CALDER, ID - No Corrections

SPOKANE R NR POST FALLS, ID
+ COEUR D'ALENE LAKE (STORAGE CHANGE)

SPOKANE R AT LONG LAKE, WA
+ COEUR D'ALENE LAKE (STORAGE CHANGE)
+ LONG LAKE, WA (STORAGE CHANGE)

Clearwater River Basin

DWORSHAK RESERVOIR INFLOW, ID
+ DWORSHAK RESV (STORAGE CHANGE)
- CLEARWATER R AT OROFINO, ID
+ CLEARWATER R NR PECK, ID

LOCHSA RIVER NR LOWELL - No Corrections

SELWAY RIVER NR LOWELL - No Corrections

CLEARWATER R AT OROFINO, ID - No Corrections

CLEARWATER R AT SPALDING, ID
+ DWORSHAK RESV (STORAGE CHANGE)

Salmon River Basin

SALMON R AT SALMON, ID - No Corrections

SALMON R AT WHITE BIRD, ID - No Corrections

Weiser, Payette, Boise River Basins

WEISER R NR WEISER, ID - No Corrections

SF PAYETTE R AT LOWMAN, ID - No Corrections

DEADWOOD RESERVOIR INFLOW, ID
+ DEADWOOD R BLW DEADWOOD RESV NR LOWMAN
+ DEADWOOD RESV (STORAGE CHANGE)

LAKE FORK PAYETTE RIVER NR MCCALL, ID – No Corrections

NF PAYETTE R AT CASCADE, ID
+ CASCADE RESV (STORAGE CHANGE)

NF PAYETTE R NR BANKS, ID
+ CASCADE RESV (STORAGE CHANGE)

PAYETTE R NR HORSESHOE BEND, ID
+ DEADWOOD RESV (STORAGE CHANGE)
+ CASCADE RESV (STORAGE CHANGE)

BOISE R NR TWIN SPRINGS, ID - No Corrections

SF BOISE R AT ANDERSON RANCH DAM, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)

BOISE R NR BOISE, ID
+ ANDERSON RANCH RESV (STORAGE CHANGE)
+ ARROWROCK RESV (STORAGE CHANGE)
+ LUCKY PEAK RESV (STORAGE CHANGE)

Wood and Lost River Basins

BIG WOOD R AT HAILEY, ID - No Corrections

BIG WOOD R NR BELLEVUE, ID - No Corrections

CAMAS CREEK NEAR BLAINE – No Corrections

BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID
+ MAGIC RESV (STORAGE CHANGE)

LITTLE WOOD R NR CAREY, ID
+ LITTLE WOOD RESV (STORAGE CHANGE)

BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections

BIG LOST R BLW MACKAY RESV NR MACKAY, ID
+ MACKAY RESV (STORAGE CHANGE)

LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections

Upper Snake River Basin

HENRYS FORK NR ASHTON, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)

HENRYS FORK NR REXBURG, ID
+ HENRYS LAKE (STORAGE CHANGE)
+ ISLAND PARK RESV (STORAGE CHANGE)
+ DIV FM HENRYS FK BTW ASHTON & ST. ANTHONY, ID
+ DIV FM HENRYS FK BTW ST. ANTHONY & REXBURG, ID
+ GRASSY LAKE (STORAGE CHANGE)

FALLS R ABV YELLOWSTONE CANAL NR SQUIRREL, ID
+ GRASSY LAKE (STORAGE CHANGE)

TETON R ABV SO LEIGH CK NR DRIGGS, ID - No Corrections

TETON R NR ST. ANTHONY, ID
- CROSS CUT CANAL
+ SUM OF DIVERSIONS ABV GAGE

SNAKE R NR MORAN, WY
+ JACKSON LAKE (STORAGE CHANGE)

PALISADES RESERVOIR INFLOW, ID
+ SNAKE R NR IRWIN, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

SNAKE R NR HEISE, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)

BLACKFOOT RESVERVOIR INFLOW, ID
+ BLACKFOOT RIVER
+ BLACKFOOT RESERVOIR (STORAGE CHANGE
SNAKE R NR BLACKFOOT, ID
+ PALISADES RESV (STORAGE CHANGE)
+ JACKSON LAKE (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT, ID
PORTNEUF R AT TOPAZ, ID - No Corrections
AMERICAN FALLS RESERVOIR INFLOW, ID
+ SNAKE RIVER AT NEELEY
+ ALL CORRECTIONS MADE FOR HENRYS FK NR REXBURG, ID
+ JACKSON LAKE (STORAGE CHANGE)
+ PALISADES RESV (STORAGE CHANGE)
+ DIV FM SNAKE R BTW HEISE AND SHELLY GAGES
+ DIV FM SNAKE R BTW SHELLY AND BLACKFT GAGES

Southside Snake River Basins

OAKLEY RESERVOIR INFLOW, ID
+ GOOSE CK ABV TRAPPER CK NR OAKLEY, ID
+ TRAPPER CK NR OAKLEY, ID
SALMON FALLS CK NR SAN JACINTO, NV - No Corrections
BRUNEAU R NR HOT SPRINGS, ID - No Corrections
OWYHEE R NR GOLD CK, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR OWYHEE, NV
+ WILDHORSE RESV (STORAGE CHANGE)
OWYHEE R NR ROME, OR – No Corrections
OWYHEE RESERVOIR INFLOW, OR
+ OWYHEE R BLW OWYHEE DAM, OR
+ OWYHEE RESV (STORAGE CHANGE)
+ DIV TO NORTH AND SOUTH CANALS
SUCCOR CK NR JORDAN VALLEY, OR - No Corrections
SNAKE R - KING HILL, ID - No Corrections
SNAKE R NR MURPHY, ID - No Corrections
SNAKE R AT WEISER, ID - No Corrections
SNAKE R AT HELLS CANYON DAM, ID
+ BROWNLEE RESV (STORAGE CHANGE)

Bear River Basin

BEAR R NR RANDOLPH, UT
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
SMITHS FORK NR BORDER, WY - No Corrections
THOMAS FORK NR WY-ID STATELINE - No Corrections (Disc)
BEAR R BLW STEWART DAM, ID
+ SULPHUR CK RESV (STORAGE CHANGE)
+ CHAPMAN CANAL DIVERSION
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)
+ DINGLE INLET CANAL
+ RAINBOW INLET CANAL
MONTPELIER CK AT IRR WEIR NR MONTPELIER, ID (Disc)
+ MONTPELIER CK RESV (STORAGE CHANGE)
CUB R NR PRESTON, ID - No Corrections

RESERVOIR CAPACITY DEFINITIONS (Units in 1,000 acre-feet, KAF)

Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. (Revised January 2002)

BASIN/ RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	NRCS CAPACITY	NRCS CAPACITY INCLUDES
PANHANDLE REGION						
HUNGRY HORSE	39.73	--	3451.00	--	3451.0	ACTIVE
FLATHEAD LAKE	Unknown	--	1791.00	--	1971.0	ACTIVE
NOXON RAPIDS	Unknown	--	335.00	--	335.0	ACTIVE
PEND OREILLE	406.20	112.40	1042.70	--	1561.3	DEAD+INACTIVE+ACTIVE
COEUR D'ALENE	--	13.50	225.00	--	238.5	INACTIVE+ACTIVE
PRIEST LAKE	20.00	28.00	71.30	--	119.3	DEAD+INACTIVE+ACTIVE
CLEARWATER BASIN						
DWORSHAK	--	1452.00	2016.00	--	3468.0	INACTIVE+ACTIVE
WEISER/BOISE/PAYETTE BASINS						
MANN CREEK	1.61	0.24	11.10	--	11.1	ACTIVE
CASCADE	--	46.70	646.50	--	693.2	INACTIVE+ACTIVE
DEADWOOD	--	--	164.00	--	164.0	ACTIVE
ANDERSON RANCH	24.90	37.00	413.10	--	450.1	INACTIVE+ACTIVE
ARROWROCK	--	--	272.20	--	272.2	ACTIVE
LUCKY PEAK	--	28.80	264.40	13.80	293.2	INACTIVE+ACTIVE
LAKE LOWELL	7.90	5.80	159.40	--	165.2	INACTIVE+ACTIVE
WOOD/LOST BASINS						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
UPPER SNAKE BASIN						
HENRYS LAKE	--	--	90.40	--	90.4	ACTIVE
ISLAND PARK	0.40	--	127.30	7.90	135.2	ACTIVE+SURCHARGE
GRASSY LAKE	--	--	15.18	--	15.2	ACTIVE
JACKSON LAKE	--	--	847.00	--	847.0	ACTIVE
PALISADES	44.10	155.50	1200.00	--	1400.0	DEAD+INACTIVE+ACTIVE
RIRIE	4.00	6.00	80.54	10.00	80.5	ACTIVE
BLACKFOOT	--	--	348.73	--	348.7	ACTIVE
AMERICAN FALLS	--	--	1672.60	--	1672.6	ACTIVE
SOUTHSIDE SNAKE BASINS						
OAKLEY	--	--	74.50	--	74.5	ACTIVE
SALMON FALLS	48.00	--	182.65	--	182.6	ACTIVE
WILDHORSE	--	--	71.50	--	71.5	ACTIVE
OWYHEE	406.83	--	715.00	--	715.0	ACTIVE
BROWNLEE	0.45	444.00	975.30	--	1419.3	INACTIVE+ACTIVE
BEAR RIVER BASIN						
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	0.21	--	3.84	--	4.0	DEAD+ACTIVE

Interpreting Streamflow Forecasts

Introduction

Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflovv forccasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

Most Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations, There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

To Decrease the Chance of Having Too Little Water

If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value.
There is a 30 percent chance the streamflow volume will be less than this forecast value.

90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value.
There is a 10 percent chance the streamflow volume will be less than this forecast value.

To Decrease the Chance of Having Too Much Water

If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.

10 Percent Chance of Exceeding Forecast. there is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the forecasts - an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Death between March I and July 31.

Using the Higher Exceedence Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three Out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstrcam damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	

For more information concerning streamflow forecasting ask your local NRCS field office for a copy of "A **Field** *Office Guide* **for** *Interpreting Streamflow Forecasts" or visit our Web page.*

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